

# Career & Technical Education/STEM Pathways

The CTE Pathway integrates core academics into hands-on and project based learning activities that allow students to explore and develop the knowledge and skills for the high-demand 21<sup>st</sup> century job market while applying core academic knowledge. Students interested in manufacturing, auto-mechanics, culinary arts, and information technology may enjoy this Pathway. Students in the CTE Pathway may take dual credit, college courses, and benefit from internships within the local job market. The CTE Pathway is concurrent with a state endorsed CTE Program of Study.

## Areas of Concentration

### AUTOMOTIVE TECHNOLOGY

#### Required Courses (2 courses)

Automotive Service 1\* (.5)  
Automotive Service 2\* (.5)  
Metals Manufacturing\* (.5)

#### Recommended Additional Courses (min. 1 course)

Auto Service 3-8\* (.5)  
Academic Tutor Automotive (1)  
Cooperative Work Experience CTE - Automotive (.5-1)  
Basic Hand Tools\* (.5)  
Metals Manufacturing 2-8\* (.5)  
Safety for Industry\* (.5)

### BUSINESS

#### Required Courses (2 courses)

Graphic Design 1 (.5)  
Business Computer Applications/Technology (.5)  
Exploring Computer Science (ECS) (1)  
Marketing 1 (1)

#### Recommended Additional Courses (min. 2 courses)

Graphic Design 2-7 (.5)  
Marketing 2 (1)  
Economics (.5) or AP Economics\* (1)  
Psychology or AP Psychology\* (1)  
Speech & Debate (1)  
Academic Tutor - Business (1)  
Cooperative Work Experience - Business (.5-1)  
Exploring Computer Science (.5)  
Business Computer Applications Technology (.5)

### CULINARY ARTS

#### Required Courses (3 courses)

Culinary Arts 1 (.5)  
Culinary Arts 2 (.5)  
Culinary Arts 3\* (1)  
Culinary Arts 4\* (1)

#### Recommended Additional Courses (min. 1 course)

Academic Tutor - Culinary Arts (1)  
Cooperative Work Experience - Culinary Arts (.5-1)

### COMPUTER SCIENCE

#### Required Courses (2 courses)

Exploring Computer Science (ECS) (1)  
AP Computer Science Principles (1)  
AP Computer Science A (JAVA) (1)  
Business Computer Applications/Technology (.5)  
Robotics Engineering 1 (.5)  
Robotics Engineering 2 (.5)

#### Recommended Additional Courses (min. 2 courses)

Video Production 1-4 (.5)  
Yearbook (1)  
Advanced Math Courses (1 each)  
Academic Tutor - ICT (1)  
Cooperative Work Experience - ICT (.5-1)  
Graphic Design\* 1 (.5)  
Graphic Design\* 2-7 (.5)

### CONSTRUCTION

#### Required Courses (2 courses)

Construction Tech 1 (.5)  
Construction Tech 2 (.5)

#### Recommended Additional Courses

Construction Tech 3 (.5)  
Construction Tech 4 (.5)  
CWE CTE: Construction Tech (.5)  
Academic Tutor - Construction (1)  
Cooperative Work Experience - Construction (.5 - 1)  
Metals Manufacturing 1 (.5)  
Metals Manufacturing 2-8 (.5)  
Basic Hand Tools\* (.5)  
Safety for Industry\* (.5)

\*Indicates College Credit

# Career & Technical Education/STEM Pathways (cont.) Areas of Concentration

## EDUCATION

### Required Courses (up to 2 courses)

Intro to Early Education (.5)  
Early Learning Field Experience 1 (.5)  
Human Development (.5)  
Best Practices in Education (.5)

### Recommended Additional Courses (min. 2 courses)

Early Learning Field Experience 2 (.5)  
Practicum in Education (1-2)  
Speech & Debate (1)  
Psychology or AP Psychology\* (1)  
World Languages (1-2)  
College-Level Courses in Content Area of Emphasis (1-2)  
NMHS Academic Tutor (.5)  
Cooperative Work Experience CTE ECE (.5)

## ENGINEERING

### Required Courses (up to 2 courses)

Introduction to Engineering Design\* - PLTW (1)  
Principles of Engineering\* - PLTW (1)  
Architectural Drafting 1-2 (.5)  
Manufacturing Design 1-2\* (.5)

### Recommended Additional Courses (min 2 courses)

Pre-Calculus\* (1)  
Honors Pre-Calculus\* (1)  
AP Calculus 1\* (1)  
AP Calculus 2\* (1)  
Honors Chemistry\* (1)  
AP Chemistry (1)  
AP Physics\* (1)  
Manufacturing Design 3-8\* (.5)  
Architectural Drafting 3-8\* (.5)  
Robotics 1-8 (.5 ea.)  
Metals Manufacturing 1 & 2 (.5 ea.)  
Cooperative Work Experience CTE - Mechanical Tech (.5-1)

## HEALTHCARE

### Required Courses (2 courses)

Chemistry or Chemistry Honors (1)  
Health Careers 1 (1)

### Recommended Additional Courses (min. 2 courses)

Health Careers 2 (1)  
Human Anatomy & Physiology\* (1)  
Kinesiology/Sports Medicine  
AP Chemistry\* (1)  
Psychology or AP Psychology\* (1)  
AP Biology (1)  
Speech and Debate (1)  
Introduction to Interpretation (.5)

## MANUFACTURING

### Required Courses (up to 2 courses)

Metals Manufacturing (.5)  
Robotics Engineering 1-2\* (.5)  
Woods Manufacturing 1-2\* (.5)  
Manufacturing Design 1-2 (.5)

### Recommended Additional Courses (min. 2 courses)

Metals Manufacturing 2-8 (.5)  
Robotics Engineering 3-8\* (.5 credit each)  
Woods Manufacturing 3-8\* (.5)  
Architectural Drafting 1-8 (.5)  
Academic Tutor CTE - Metals (1)  
Academic Tutor CTE - Manufacturing (1)  
Cooperative Work Experience CTE - Cabinetmaking (.5-1)  
Cooperative Work Experience CTE - Manufacturing (.5-1)  
Cooperative Work Experience CTE - Metals (.5-1)  
Basic Hand Tools\* (.5)  
Safety for Industry\* (.5)

## MEDIA ARTS

### Required Courses (2 courses)

Video Production 1 (.5)  
Graphic Design 1 (.5)

### Recommended Additional Courses (min. 2 courses)

Video Production 2-4 (.5)  
Graphic Design 2-7 (.5)

\*Indicates College Credit

# Visual & Performing Arts Pathway

The Visual and Performing Arts Pathways are for students who want to nurture and cultivate their creativity, passion, and skill in both visual and performing arts. Students who enjoy art, music and theater will benefit from taking courses in one of these Pathways.

## Areas of Concentration

### VISUAL ARTS

#### Required Courses (4 courses)

Art 1 (1 credit)  
Sculpture 1 (.5)  
Graphic Design\* 1 (.5)  
Art 2 (.5 credit)  
AP Studio Art 1\* (1)  
AP Studio Art 2\* (1)  
Sculpture 2-3 (.5)  
Graphic Design\* 2 (.5)

### PERFORMING ARTS

#### Developmental Courses (4 courses)

Tenor/Bass Ensemble  
Treble Choir (1)  
Mixed Choir (1)  
Chamber Choir (1)  
Concert Choir (1)  
Concert Orchestra (1)  
Chamber Orchestra (1)  
Concert Band (1)  
Symphonic Band (1)  
Wind Ensemble (1)  
Jazz Cadets (1)  
Jazz Ambassadors (1)  
Intro to Guitar (.5)  
World Drumming (.5)  
Music Theory (1)  
Theatre Arts 1 (.5)  
Theatre Arts 2 (1)  
Sinfonia (1)  
Stagecraft (.5)  
Physical Theatre (.5)

*\*Indicates College Credit*

# Academic Pathway

The Academic Pathway is intended for students who are interested in exploring advanced concepts in traditional content areas. If students are passionate about the fields of English, math, world languages, science or social science, the Academic Pathway is for them. Engaging in an Academic Pathway provides preparation for post-secondary education, whether you are attending a four-year university or any other post-secondary institution.

## Areas of Concentration

### ENGLISH

#### 4 Courses Required

English 1 (1)  
English 2 or AP Prep English 2 (1)  
English 3 or AP Language & Composition\* (1)  
English 4 or AP Literature & Composition\* (1)  
English Workshop (.5)  
Digital Journalism (1)  
Dramatic Literature (1)  
Speech & Debate (1)  
Technical Writing (1)  
Gothic and Horror Fiction (1)

### MATH

#### 4 Courses Required

Algebra 1A (1)  
Algebra 1B (1)  
Algebra 1 (1)  
Geometry or Geometry Honors (1)  
Fundamentals of Geometry (1)  
Algebra 2 Fundamentals (1)  
Algebra 2 or Algebra 2 Honors (1)  
Pre-Calculus\* or Pre-Calculus Honors\* (1)  
AP Statistics\* (1)  
AP Calculus\* (1)  
AP Calculus 2\* (1)  
Statistics (1)

### WORLD LANGUAGES

#### 4 Courses Required

French 1,2,3\*,4\* (1-4 credits)  
Spanish 1,2,3\*,4\*,5\* (1-5 credits)  
Heritage Spanish 3,4 (1)  
Introduction to Interpretation (.5)

### SCIENCE

#### 4 Courses Required

Life Science (1)  
Physical Science (1)  
Biology or Biology Honors (1)  
Chemistry or Chemistry Honors (1)  
Forensic Science (1)  
Physics (1)  
AP Chemistry\* (1)  
Environmental Science (1)  
Human Anatomy & Physiology\* (1)  
AP Biology\* (1)  
AP Physics\* (1)  
Astronomy\* (1)  
Zoology\* (1)

### SOCIAL SCIENCE

#### 4 Courses Required

World Studies  
AP World History (1)  
AP Human Geography\* (1)  
American Studies or AP US History\* (1)  
Contemporary Issues or AP Government (1)  
Economics (1)  
AP Economics\* (1)  
AP European History\* (1)  
AP Psychology (1)  
Psychology (.5)  
Introduction to Interpretation (.5)

\*Indicates College Credit

# Pre-Professional Pathway

The pre-Professional Pathway is designed for all types of students to explore career possibilities while in high school. Project Lead the Way (PLTW) Pre-Engineering is a nationally renowned program offered at the Medford School District that gives students high quality, hands-on experience in the engineering world. If students are interested in business, healthcare, computer science, law, environmental science or education, this Pathway is for them.

## Areas of Concentration

### HEALTHCARE

#### Required Courses (2 courses)

Chemistry or Chemistry Honors (1)  
Health Careers 1 (1)

#### Recommended Additional Courses

##### (min. 2 courses)

Health Careers 2 (1)  
Human Anatomy & Physiology\* (1)  
Kinesiology/Sports Medicine  
AP Chemistry\* (1)  
Psychology or AP Psychology\* (1)  
AP Biology (1)  
Speech and Debate (1)  
Introduction to Interpretation (.5)

### SERVICE & LEADERSHIP

#### Choose 4 Courses

American Studies/AP US History\* (1)  
Military Science 1 (.5)  
Military Science 2 (.5-1) 11 & 12 only  
NMHS Leadership (1)  
Psychology/AP Psychology (1)  
Speech & Debate (.5-1)  
AP Government (.5)  
Mock Trial (1)  
Student Government (.5-1)  
NMHS Link Leader (.5)  
Introduction to Interpretation (.5)

### LAW

#### Required Courses (3 courses)

Introduction to Law (.5)  
Criminal Law (.5)  
Mock Trial (1)  
  
American Studies or AP US History\* (1)

#### Recommended Additional Courses (min. 2 courses)

Forensic Science (.5, may be repeated)  
Speech & Debate (1)  
Psychology or AP Psychology\* (1)  
Contemporary Issues (1)  
AP Language & Composition\* (1)  
AP Government\* (1)  
AP Economics (1)  
Introduction to Interpretation (.5)

### NATURAL RESOURCES

#### Required Courses (2 courses)

Environmental Science (1)  
Biology or Biology Honors (1)

#### Recommended Additional Courses (min. 2 courses)

AP Biology (1)  
AP Statistics (1)  
Forensic Science (1)

*\*Indicates College Credit*